

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Math: \_\_\_\_\_

# Pre-Algebra Unit 2

Practice Packet  
- - -  
answer Key

## Practice 2-1 Properties of Numbers

Simplify each expression using mental math.

1.  $4 \cdot 13 \cdot 25$   
\_\_\_\_\_

2.  $700 + 127 + 300$   
\_\_\_\_\_

3.  $68 + 85 + 32$   
\_\_\_\_\_

4.  $2 \cdot 3 \cdot 4 \cdot 5$   
\_\_\_\_\_

5.  $-14 + 71 + 29 + (-86)$   
\_\_\_\_\_

6.  $125 \cdot 9 \cdot 8$   
\_\_\_\_\_

7.  $20 \cdot 7 \cdot 5$   
\_\_\_\_\_

8.  $217 + 545 - 17$   
\_\_\_\_\_

9.  $39 + 27 + 11$   
\_\_\_\_\_

10.  $4 \cdot 12 \cdot 250$   
\_\_\_\_\_

11.  $19 + 0 + (-9)$   
\_\_\_\_\_

12.  $-6 \cdot 1 \cdot 30$   
\_\_\_\_\_

Write the letter of the property shown.

13.  $14(mn) = (14m)n$  \_\_\_\_\_

14.  $19 + 11 = 11 + 19$  \_\_\_\_\_

15.  $k \cdot 1 = k$  \_\_\_\_\_

16.  $(x + y) + z = x + (y + z)$  \_\_\_\_\_

17.  $65t = t(65)$  \_\_\_\_\_

18.  $p = 0 + p$  \_\_\_\_\_

19.  $n = 1 \cdot n$  \_\_\_\_\_

20.  $(x + p) + (r + t) = (r + t) + (x + p)$  \_\_\_\_\_

21.  $(h + 0) + 4 = h + 4$  \_\_\_\_\_

22.  $x + yz = x + zy$  \_\_\_\_\_

- a. commutative property of addition
- b. associative property of addition
- c. commutative property of multiplication
- d. associative property of multiplication
- e. additive identity
- f. multiplicative identity

Evaluate each expression using mental math.

23.  $x(yz)$ , for  $x = 8, y = -9, z = 5$  \_\_\_\_\_

24.  $q + r + s$ , for  $q = 46, r = 19, s = 54$  \_\_\_\_\_

25.  $a(b)(-c)$ , for  $a = 7, b = -2, c = 15$  \_\_\_\_\_

**Reteaching 2-2****The Distributive Property**

According to the Distributive Property, you distribute or “pass out” a multiplication to each part of a sum or difference in parentheses.

In  $2(a + b) = 2a + 2b$ , we “pass out” the 2 by multiplying it by both the  $a$  and the  $b$ .

Multiply  $6(x - 9)$ .

$$\begin{aligned} 6(x - 9) &= 6x - 6(9) \\ &= 6x - 54 \end{aligned}$$

Multiply  $(4 - h)(-3)$ .

$$\begin{aligned} (4 - h)(-3) &= 4(-3) - h(-3) \\ &= -12 - (-3h) \\ &= -12 + 3h \\ &= 3h - 12 \end{aligned}$$

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**Complete with the appropriate number or variable.**

- $12(5 + 9) = 12 \cdot 5 + \underline{\hspace{2cm}} \cdot 9$
- $(3 - 8)7 = \underline{\hspace{2cm}} \cdot 7 - 8 \cdot \underline{\hspace{2cm}}$
- $z(a - b - c) = \underline{\hspace{2cm}} \cdot a - z \cdot \underline{\hspace{2cm}} - \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}}$
- $[14 + (-3)]7 = 14 \cdot \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \cdot 7$
- $p[(-3) + n] = p \cdot \underline{\hspace{2cm}} + \underline{\hspace{2cm}} \cdot \underline{\hspace{2cm}}$

**Multiply each expression.**

- $4(x + 5) = \underline{\hspace{3cm}}$
- $(6 - m)(-4) = \underline{\hspace{3cm}}$
- $s(-6 + t) = \underline{\hspace{3cm}}$
- $8(j - 2k + l) = \underline{\hspace{3cm}}$
- $(z - 4)(-5) = \underline{\hspace{3cm}}$
- $9[(-7) - y] = \underline{\hspace{3cm}}$

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**Reteaching 2-3****Simplifying Variable Expressions**Simplify  $5n + (-n - 4)(-2)$ .

$$5n + (-n - 4)(-2)$$

$$= 5n + (-n)(-2) - 4(-2)$$

$$= 5n + 2n + 8$$

$$= (5 + 2)n + 8$$

$$= 7n + 8$$

Use the Distributive Property.

Multiply. Think of  $-4(-2)$  as  $+(-4)(-2)$ .

Use the Distributive Property to combine like terms.

Add.

**Complete each equation.**

1.  $9a - 7a + 5$

$$= (9 - 7) \underline{\hspace{2cm}} + 5$$

$$= \underline{\hspace{2cm}} a + 5$$

2.  $5k - 4 - 8k$

$$= 5k - 8 \underline{\hspace{2cm}} - 4$$

$$= (5 - 8) \underline{\hspace{2cm}} - 4$$

$$= \underline{\hspace{2cm}} - 4$$

**Simplify each expression.**

3.  $12a + 4 - 10a$   
\_\_\_\_\_

5.  $2(n - 4) + 3$   
\_\_\_\_\_

7.  $5(2y + 1) - 7y$   
\_\_\_\_\_

9.  $8c + 5(c - 3)$   
\_\_\_\_\_

11.  $q(-3) + 3(2 + q)$   
\_\_\_\_\_

13.  $(-3)(1 - 2n) + 2(n + 4)$   
\_\_\_\_\_

4.  $7 + x - 7x$   
\_\_\_\_\_

6.  $-3(a + 5) + 9$   
\_\_\_\_\_

8.  $2(4 - 3t) - (-3) + 2t$   
\_\_\_\_\_

10.  $-2(-4 - 3s)$   
\_\_\_\_\_

12.  $(3 + k)(-4) - 5k$   
\_\_\_\_\_

14.  $9p - 3(5p + 2) + 6$   
\_\_\_\_\_

**Reteaching 2-5****Solving Equations by Adding or Subtracting**Solve  $x - 9 = 2$  and  $x + 8 = 3$ .Since the 9 is subtracted from  $x$ , do the inverse and add 9 to both sides of the equation.

$$x - 9 = 2$$

$$x - 9 + 9 = 2 + 9$$

$$x = 11$$

In  $x + 8 = 3$ , 8 is added to  $x$ . So, subtract 8 from both sides of the equation.

$$x + 8 = 3$$

$$x + 8 - 8 = 3 - 8$$

$$x = -5$$

**Solve each equation.**

1.  $17 + m = 21$   
\_\_\_\_\_

3.  $t + 9 = -9$   
\_\_\_\_\_

5.  $r + 7 = -16$   
\_\_\_\_\_

7.  $144 + g = 78$   
\_\_\_\_\_

9.  $-11 + b = -11$   
\_\_\_\_\_

11.  $24 = k - 2$   
\_\_\_\_\_

13.  $37 = z - 3$   
\_\_\_\_\_

15.  $18 + n - 7 = 44$   
\_\_\_\_\_

2.  $y - 34 = 43$   
\_\_\_\_\_

4.  $15 = z + 6$   
\_\_\_\_\_

6.  $68 = p - 41$   
\_\_\_\_\_

8.  $311 = y - 281$   
\_\_\_\_\_

10.  $s + 31 = 14$   
\_\_\_\_\_

12.  $8 + f = 30$   
\_\_\_\_\_

14.  $a + 19 = -82$   
\_\_\_\_\_

16.  $15 = 7 + h + 14$   
\_\_\_\_\_

**Reteaching 2-6****Solving Equations by Multiplying or Dividing**Solve  $4x = -32$ .

$$4x = -32$$

$$\frac{4x}{4} = \frac{-32}{4} \quad \text{Since 4 is multiplied by } x, \text{ divide both sides of the equation by 4.}$$

$$x = -8$$

Solve  $\frac{x}{-5} = -9$ .

$$\frac{x}{-5} = -9$$

$$-5\left(\frac{x}{-5}\right) = -5(-9) \quad \text{Since } x \text{ is divided by } -5, \text{ multiply both sides of the equation by } -5.$$

$$x = 45$$

**Solve each equation.**

1.  $7m = 35$   
\_\_\_\_\_

2.  $\frac{b}{8} = -3$   
\_\_\_\_\_

3.  $90 = 10k$   
\_\_\_\_\_

4.  $1 = \frac{n}{14}$   
\_\_\_\_\_

5.  $100 = -20n$   
\_\_\_\_\_

6.  $\frac{p}{15} = 5$   
\_\_\_\_\_

7.  $-87,654y = 0$   
\_\_\_\_\_

8.  $\frac{m}{4} = -12$   
\_\_\_\_\_

9.  $-10a = 10$   
\_\_\_\_\_

10.  $\frac{z}{-4} = 16$   
\_\_\_\_\_

11.  $350t = -700$   
\_\_\_\_\_

12.  $11j = 121$   
\_\_\_\_\_

13.  $\frac{r}{-7} = 13$   
\_\_\_\_\_

14.  $-7,650 = 10c$   
\_\_\_\_\_

15.  $23 = \frac{w}{3}$   
\_\_\_\_\_

16.  $125 = 25g$   
\_\_\_\_\_

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## Writing Equations Practice:

### ***Directions:***

For each problem, write an equation that **best** matches the scenario, then solve.

#### Question 1:

Ashley had some number of cookies. She then gave 5 to Richard. She did not eat any cookies. Ashley now has 12 cookies. How many did she have to start?

#### Question 2:

Brittany had read some of her book. Last night, she read 28 more pages. She is now on page 117. Where did she start?

#### Question 3:

David wants to save \$52 a month. He wants to buy a flat-screen television that costs \$364. How many months will he need to save?

#### Question 4:

Andrew had some number of basketball tickets. He split them between him and his seven friends. Each friend got two tickets. How many tickets did Andrew have?

#### Question 5:

Matt is going cliff diving. He starts at a certain elevation and dives 215 feet. He ends up 150 feet below the surface of the water. How high was the cliff that Matt dove off of?

#### Question 6:

Scott was in debt \$23. He earned some amount of money and he now owes just \$5. How much money did he earn?

## Reteaching 2-3

1.  $a, 2$  2.  $k, k, -3k$  3.  $2a + 4$  4.  $7 - 6x$   
 5.  $2n - 5$  6.  $-3a - 6$  7.  $3y + 5$  8.  $11 - 4t$   
 9.  $13c - 15$  10.  $6s + 8$  11.  $6$  12.  $-9k - 12$

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Answers

## Practice 2-1

1. 1,300 2. 1,127 3. 185 4. 120 5. 0  
 6. 9,000 7. 700 8. 745 9. 77 10. 12,000  
 11. 10 12. -180 13. d 14. a 15. f 16. b  
 17. c 18. e 19. f 20. a 21. e 22. c  
 23. -360 24. 119 25. 210

## Reteaching 2-5

1.  $m = 4$  2.  $y = 77$  3.  $t = -18$  4.  $z = 9$   
 5.  $r = -23$  6.  $p = 109$  7.  $g = -66$   
 8.  $y = 592$  9.  $b = 0$  10.  $s = -17$   
 11.  $k = 26$  12.  $f = 22$  13.  $z = 40$   
 14.  $a = -101$  15.  $n = 33$  16.  $h = -6$

## Reteaching 2-6

1.  $m = 5$  2.  $b = -24$  3.  $k = 9$  4.  $n = 14$   
 5.  $n = -5$  6.  $p = 75$  7.  $y = 0$  8.  $m = -48$   
 9.  $a = -1$  10.  $z = -64$  11.  $t = -2$   
 12.  $j = 11$  13.  $r = -91$  14.  $c = -765$   
 15.  $w = 69$  16.  $g = 5$

## Reteaching 2-2

1. 12 2. 3, 7 3.  $z, b, z, c$  4. 7, (-3)  
 5. (-3),  $p, n$  6.  $4x + 20$  7.  $4m - 24$   
 8.  $st - 6s$  9.  $8j - 16k + 8l$  10.  $20 - 5z$   
 11.  $-63 - 9y$

## Lesson 6

1.  $x = \# \text{ cookies begin}$

$$x - 5 = 12$$

$$x = 17$$

2.  $x = \# \text{ page B read @ 1st}$

$$x + 28 = 117$$

$$x = 89$$

3.  $x = \# \text{ months}$

$$52x = 364$$

$$x = 7$$

4.  $x = \# \text{ basketball}$

$$\frac{x}{8} = 2$$

$$x = 16$$

5.  $x = \text{elevation cliff}$

$$x - 215 = -150$$

$$x = 65$$

6.  $x = \text{amt \$ earned}$

$$-23 + x = 5$$

$$x = 18$$

+ + Andrew